



Translation

PATENT COOPERATION TREATY

PCT

10/527489

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference PG 06093 WO/mk | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/EP2003/010250 | International filing date (day/month/year) 15 September 2003 (15.09.2003) | Priority date (day/month/year) 13 September 2002 (13.09.2002) |
| International Patent Classification (IPC) or national classification and IPC B60T 10/02 | | |
| Applicant VOITH TURBO GMBH & CO. KG | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|--|--|
| Date of submission of the demand 13 April 2004 (13.04.2004) | Date of completion of this report 21 February 2005 (21.02.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/010250

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 2-10 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of 05 February 2005 (05.02.2005)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1 (with the letter of 05.02.05) 2-9 _____, filed with the letter of 15 October 2004 (15.10.2004)
- ☒ the drawings:
pages _____ 1/4-4/4 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-------|-----|
| Novelty (N) | Claims | 1 - 9 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1 - 9 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1 - 9 | YES |
| | Claims | | NO |

2. Citations and explanations

This report makes reference to the following documents:

- D1: US-A-3 924 713
- D2: WO 98/15725 A
- D3: EP-B-0 885 351.

Novelty and inventive step:

D1, which is regarded as the closest prior art, discloses (the reference signs in parentheses refer to D1):

a vehicle drive unit with a vehicle cooling circuit, comprising a hydrodynamic retarder (1) with a rotor impeller and a stator impeller, the hydrodynamic retarder (1) being arranged in the vehicle cooling circuit (11) and the working medium of the retarder being the vehicle coolant, and means (8) being connected to the vehicle cooling circuit (11) for evacuating a predetermined quantity of working medium from the vehicle cooling circuit (11) when switching from braking operation to non-braking operation and for supplying a predetermined quantity of working medium to the vehicle cooling circuit (11) when switching from non-braking operation to braking operation.

Therefore, the subject matter of claim 1 differs from the known vehicle cooling circuit in that

when switching from braking operation to non-braking operation, the quantity of working medium flowing in the vehicle cooling circuit is reduced by the amount evacuated, and when switching from non-braking operation to braking operation, the quantity of working medium flowing in the vehicle cooling circuit is increased by the amount supplied.

Therefore, the subject matter of claim 1 is novel (PCT Article 33(2)).

Consequently, the problem to be solved by the present invention can be regarded as that of compensating for and reducing a pressure surge during evacuation of the retarder (description, page 4, lines 11-22).

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons: D1 neither anticipates nor renders obvious a reduction or increase in the quantity of working medium flowing in the vehicle cooling circuit.

Claims 2-9 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

Industrial applicability:

The invention can be used in the motor vehicle industry.

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Additional remarks:

The description is not consistent with the present claims
(PCT Rule 5.1(a)(iii)).